

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 19, line 21, to read as follows:

The pseudo-image ~~600-A~~ of FIGURE 6A is determined from the image shown in FIGURE 2, and is produced by determining an intensity threshold, for example an intensity value between the peaks of an approximately bimodal intensity distribution, and assigning all pixels having intensities below the threshold a value of zero, and all other pixels a value of one. As shown by the "fuzzy" portions in the image ~~600-A~~ of FIGURE 6A, this thresholding operation may not identify all extraneous (white) pixels, and known image processing operations can improve the results displayed in image ~~600-A~~ of FIGURE 6A.

Please amend the paragraph beginning on page 19, line 28, to read as follows:

The pseudo-image ~~600-B~~ of FIGURE 6B shows the results from applying an erosion operation, followed by a first closing operation (a dilation followed by an erosion), followed by a dilation operation, followed by a second closing operation, followed by a final dilation operation. For example, the erosion operations may include assigning each pixel the value corresponding to the minimum pixel value (0, for a binary image) in its 8-connected neighborhood. The dilation operations may include assigning each pixel the value corresponding to the maximum pixel value (1, for a binary image) in its 8-connected neighborhood. As can be seen in the image ~~600-B~~ of FIGURE 6B, the operations have conservatively identified the extraneous image data (the white grid) throughout the image, with few exceptions.

Please amend the paragraph beginning on page 21, line 4, to read as follows:

The embodiment used to determine the results shown in FIGURE 7 starts from the pseudo-image ~~600-A~~ of FIGURE 6A, described above. The pseudo-image template ~~700-A~~ of

FIGURE 7A is an image portion comprising a selected instance of a repetitive feature found in the pseudo-image ~~600-A~~ of FIGURE 6A. Such an image portion may be defined by a machine operator during a training mode, for example. In this case, the template includes a representative intersection of the extraneous grid pattern 304.

Please amend the paragraph beginning on page 21, line 10, to read as follows:

The pseudo-image ~~700-B~~ of FIGURE 7B shows the results obtained by determining a normalized cross-correlation matrix based on the template ~~700-B~~ of FIGURE 7A and the pseudo-image ~~600-A~~ of FIGURE 6A. Higher intensity in the pseudo-image ~~700-B~~ of FIGURE 7B corresponds to better correlation. A normalized cross-correlation method, and usable alternative template matching methods, are described in "*A Survey Of Image Registration Techniques*" by L.G. Brown, *ACM Computing Surveys*, vol. 24, no. 4, pp. 325-376, 1992, which is incorporated herein by reference in its entirety. The location of the various intersections of the extraneous grid pattern 304 are clearly indicated by the intensity peaks in the pseudo-image ~~700-B~~ of FIGURE 7B.

Please amend the paragraph beginning on page 21, line 18, to read as follows:

Next, in various embodiments, the effective center or centroid of each of the peaks is determined by one of a variety of known methods. For example, a threshold can be applied to the pseudo-image ~~700-B~~ of FIGURE 7B, as previously described for the pseudo-image ~~600-A~~ of FIGURE 6A, and the centroids of the "islands" corresponding to the correlation peaks in the resulting binary image may be determined. Then, when the extraneous image feature comprises a grid of lines, a plurality of lines are fit to the grid of the centers or centroids. The line fitting may rely on a priori knowledge of the orientation and/or nominal space, or the like, of the grid

lines. In various exemplary embodiments, the lines may be fit over a limited number of points in a local region of an image such as a region of interest for a defined inspection operation. In any case, it should be appreciated that in this exemplary embodiment, the lines will be located in a manner corresponding to any distortions that may be present in the grid in a particular image.

Please amend the paragraph beginning on page 21, line 30, to read as follows:

Next, the lines fit to the centers or centroids are given a width corresponding to a nominal line width on the extraneous feature, based on a priori knowledge, such as a specification or measurement of the nominal line width. In various embodiments, the lines having the nominal width are the extraneous image data to be excluding according to this invention. The image ~~700-D~~ of FIGURE 7D shows a representation of such analytically determined extraneous image data superimposed on a portion of the image shown in FIGURE 2.

Please delete the previous version of the abstract of the disclosure. A substitute abstract is appended hereto as a separate page.